FINAL

INSTITUTIONAL ANALYSIS REPORT

323-ACRE WOODED SITE
JEFFERSON PROVING GROUND
MADISON, INDIANA

PREPARED FOR:

U.S. ARMY CORPS OF ENGINEERS
HUNTSVILLE CENTER

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SECTION 1
INTRODUCTION

1.1 PURPOSE

This Institutional Analysis Report was prepared to support the development of institutional control alternatives for the Engineering Evaluation and Cost Analysis (EE/CA) evaluation of the 323-acre wooded site at Jefferson Proving Ground (JPG). This report has been prepared for the US Army, Corps of Engineers, Engineering and Support Center, Huntsville, (USAESCH) under contract number DACA87-95-D-0018, Task Order 0042.

1.2 INSTITUTIONAL CONTROLS

Institutional controls at OE-contaminated sites rely on the existing powers and authorities of other governmental agencies to protect the public at large from unexploded ordnance (UXO) risk. Behavior modification and access controls are used to protect the public from the risk of UXO exposures, instead of direct removal of all UXO from the site.

1.3 OBJECTIVE, APPLICABILITY AND SCOPE

The objective of this report is to identify the governmental agencies that have jurisdiction at JPG and evaluate their capabilities and willingness to assert control in order to protect the public at large from UXO hazards at the site. This report has been prepared to support the institutional control alternative that is included in the EE/CA report. Local and state authorities that will need to support long-term maintenance for institutional control measures proposed for the site are identified, each institutional control alternative is discussed, and the level or degree of support required for each alternative is described.

1.4 REPORT ORGANIZATION

This report is divided into four sections. Section 1 provides an introduction and organization. Section 2 contains a description of the site and the methodology used in developing the institutional control alternatives. Section 3 describes the institutional control alternatives evaluated and Section 4 lists the recommended institutional control alternative.

SECTION 2
SITE DESCRIPTION, HISTORY, AND METHODOLOGY

2.1 FACILITY AND SITE BACKGROUND

2.1.1 Facility and Site Description

JPG, a U.S. Army installation, is situated on 55,264 acres in Jefferson, Ripley, and Jennings Counties, Indiana (Figure 2-1). The installation is generally rectangular in shape with approximate dimensions of 18 miles in the north-south direction by about five and one-half miles in the east-west direction. The main gate of the installation is approximately five miles north of Madison, Indiana and 56 miles northeast of Louisville, Kentucky.

The 323-acre wooded site evaluated in this EE/CA is a relatively flat, heavily wooded area dissected by perennial streams and classified as part of the Muscatauck Flats and Canyons Section of the Bluegrass Natural Region. The site is characterized best by the presence of poorly drained, acidic Cobbsfork and Avonburg silt loam soil and the occurrence of a southern flatwood natural community type. This natural community consists of beech, red maple, sweet gum, pin oak, swamp chestnut oak, and tulip trees. (Archives Search Report, 1995)

2.1.2 Facility and Site History

JPG was used as a U.S. Army Proving Ground between 1941 and 1995. Based on historical data, of the more than 27 million UXO items tested at JPG's ranges, approximately 1.5 million may remain at the facility. The UXO items range in size from small caliber firearm projectiles to 2,000 pound bombs. Prior to Department of Defense (DOD) ownership, land use was made up of small family farms and forested areas. When DOD took over the property in late 1940, several small communities were condemned and about 500 families were relocated.

The mission of JPG included performing production and post-production tests of conventional ammunition components and other UXO items. Units at JPG also conducted tests of ammunition propellants and other weapon systems components and tested and evaluated all types of munitions. Units at JPG performed this function almost

Figure 2-1

continuously until September 1994. The facility closed on September 30, 1995 and its mission was reassigned to Yuma Proving Ground in Arizona.

This project involved a 323-acre wooded site that is located just west of the former base's runways. Tokyo Road borders the site on the east, Perimeter Road on the west, and Woodfill Road on the north. The site lies south of (behind) the main firing line and, as a result, large caliber projectiles or bombs are not likely to be encountered here. However, it is possible that the area may contain mortar rounds, rockets, and other munitions used by light infantry units.

2.1.3 Archeological / Historical Resources

The 323-acre wooded site has a low probability of having Native American archeological sites because of the distance from year round water for campsites or villages. No known archeological sites have been identified in this portion of JPG. Historical records show only one area of potential activity for this site, this being an area designated as an ordnance test site along Tokyo Road near where the railroad crosses. No structures were observed in this area during the site visit conducted in March 1999.

2.1.4 Ecological Resources

JPG offers an excellent habitat for many types of wildlife including over 161 species of birds, 35 species of reptiles and amphibians, and over 200 species of mammals. The United States Fish and Wildlife Service (USFWS), Indiana Department of Natural Resources (IDNR) and other entities have conducted several studies related to ecological resources at the site over the years. The USFWS has issued a statement that there are no federally endangered species in areas south of the firing line, including the site being evaluated. The forest vegetation at the site consists of beech, red maple, sweet gum, pin oak, swamp chestnut oak, and tulip trees. Other shrubs, vines and grasses in the area include: the river alder, flowering dogwood, hawthorn, honeysuckle, smooth sumac, blueberry, big bluestem and broomsedge.

2.2 UXO RESPONSE METHODOLOGY

2.2.1 UXO Response Strategies

JPG is undergoing closure under the Base Realignment and Closure (BRAC) program prior to final disposition of the facility. The US Army is currently responsible for the site. The Ford Lumber and Building Supply Company has first right of refusal to purchase the site from

the government. Response strategies for dealing with UXO contaminated sites at JPG include the following:

- ?? OE Removal;
- ?? Access Control; and
- ?? Behavior Modification.

The last two strategies are considered institutional control response strategies and will be evaluated for the 323-acre site. These strategies require local agency cooperation, responsible land-use control, and police powers for enforcement. These strategies are inherently non-federal and require a high level of community involvement in order to be successful.

Institutions are defined as local and state governmental agencies and other organizations that can assist in the development, implementation, and or maintenance of the institutional control. They are the vital element needed to implement any recommended institutional control. This institutional control analysis started with obtaining responses to the following questions:

- ?? What institutions hold control over the site?
- ?? What authority do they have?
- ?? Do they have specific responsibility in land-use control and/or public safety?
- ?? What capabilities do they have?
- ?? What resources do they have?
- ?? Are they willing to play a role?

2.2.2 Analysis Methodology

The methodology used to analyze the potential institutional control alternatives for reducing the risk associated with UXO on the site includes the following:

- ?? Gather knowledge of the area through discussions with USACE and preliminary telephone calls to the various institutions. Determine both current and potential future users of the land.
- ?? Conduct a kick-off meeting with USACE at JPG. This meeting was held on March 10, 1999 and included a review of the processes developed by USACE personnel for institutional controls and an overview of the scope of services.
- ?? Conduct several on-site and telephone interviews with institutions that could potentially have jurisdiction over the formerly used UXO lands to assess their capability and willingness to assert control.

2.3 SELECTION CRITERIA

2.3.1 Criteria

The selection criteria used in selecting agencies for interviews included:

- ?? contact with current users of the property;
- ?? contact with potential future users of the property;
- ?? technical capability for access control and/or behavior modification strategies;
- ?? capability to provide a variety of media sources (e.g., print, visual) that would provide complete coverage/contact with users;
- ?? capability to implement the strategy at a later date;
- ?? authority to assist in implementing/maintaining institutional controls;
- ?? responsibility for land-use control and/or public safety; and
- ?? ability and willingness to assist in the implementation/maintenance of an institutional control program.

2.3.2 Scheduled Interviews

Historically, JPG has been operated as a small self-contained city with restricted access. State and local government agencies will now be taking on a more active role within the former facility's boundaries as the parcels are transferred to the private sector. The government and private parties interviewed as part of the institutional analysis included:

- ?? Department of the Army Jefferson Proving Ground;
- ?? Potential Future Corporate Owners (Mr. Ford);
- ?? U.S. Fish and Wildlife Service;
- ?? Indiana State Police;
- ?? Jefferson County Sheriff's Department; and
- ?? Jefferson County Commissioner's Office.

The results of the interviews are contained in Appendix A.

SECTION 3
INSTITUTIONAL CONTROL ALTERNATIVES

3.1 INTRODUCTION

Risks related to ordnance contamination may be managed through conventional removals, access control, behavior modification, or a combination of strategies. It is important to understand that the risk associated with ordnance contamination is associated with three causative factors that, if completely avoided, would prevent an ordnance-related accident. These three factors are presence, access, and behavior. If there is no ordnance presence then there is no possibility of an ordnance-related accident. If ordnance potentially exists on-site, but people do not have access, then there also will be no accident. Even if ordnance exists on-site and people have access to the ordnance, if their behavior is appropriate, then there is only a small risk of an accident. An accident requires all three events or circumstances to be present. Each factor provides the basis for a separate implementation strategy.

3.2 ACCESS CONTROL ALTERNATIVES

Access control limits the use of the contaminated property. This can be accomplished by implementing various restrictions or dedicating the property to compatible use. The target strategy is to remove the human element from the chain of events that could lead to an accident. Access control can be facilitated in the form of signage, fencing, and land use restrictions and regulatory controls. A summary of the access control alternatives considered in this plan and the effectiveness, implementability and cost of each alternative is presented in Table 3-1.

3.2.1 Description of Access Controls

3.2.1.1 Signage

Signs are typically posted to inform people that entry is prohibited or that activities within the property are restricted in some manner. Defiance of these restrictions may be subject to disciplinary legal action. Signage is typically one element of an overall institutional control plan that uses the concept of respect for property rights. Warning signs currently exist along the perimeter of the JPG facility, but not along the inside

Table 3-1
Institutional Control Plan
Access Control Alternatives

Alternative	Effectiveness	Implementability	Initial Cost	Annual Cost
Signage	New signs would be moderately effective in discouraging entry to the site provided trespassing laws are enforced and signs are maintained.	Easy to implement; signs exist around the perimeter of the JPG facility and new signs will be needed on the inside perimeter of the site. Signs would be placed every 100 feet along the perimeter.	$11,000	Minimal
Fencing	New fencing would be moderately effective in physically preventing entry to the site provided trespassing laws are enforced and fences are maintained.	Requires the installation of 30,000 LF of chain link fence around the perimeter of the site. Fencing exists around the perimeter of the JPG facility.	New fencing (30,000 LF at $15/LF)- $450,000. UXO avoidance survey $80,000 for a TOTAL of $530,000	Maintenance of Fencing – $1000
Land Use Restrictions and Zoning Ordinances	Not effective unless zoning ordinances that limit access are created and enforced. Would prevent future incompatible land uses by public and private landowners.	Difficult to implement and enforce. Requires involvement of local planning boards, zoning commissions and law enforcement agencies.	$10,000	Minimal

perimeter of the 323-acre site. Under this alternative, additional signs informing the public of potential dangers could be created and posted to prevent or discourage entry. The link between not trespassing and explosive safety could be made through signage. Indiana trespass laws are the key regulatory element of signage and the associated enforcement and cooperation between landholders, law enforcement, and the general public. In the absence of warning signs, simple trespass laws cannot be enforced without a civil action by the courts. Signage is only effective with the cooperation of local officials and the community together with the funding and technical support from the federal government. The federal government currently owns all of the property within the site at JPG but will rely heavily on local agencies to enforce trespass laws. A letter dated October 8, 1997 gives the state police and local law enforcement officials the authority to enforce all state and federal laws regarding trespassing on the JPG facility. The future owner would have to maintain the signs for future control of the site.

3.2.1.2 Fencing

As with signage, fencing is typically one element of an overall institutional control plan that uses the concept of respect for property rights. Under this alternative, a chain link fence would be installed around the site to provide a physical barrier to inadvertent entry. The presence of this fencing would make it easier to enforce posted trespassing restrictions. Again, Indiana trespass laws are the key element of enforcement and cooperation between landholders, law enforcement, and the general public. Fencing is most effective with the cooperation of local officials and the community with funding and technical support from the federal government. The federal government owns all of the property at JPG but will rely heavily on local agencies to enforce trespass laws. A letter dated October 8, 1997 gives the state police and local law enforcement officials the authority to enforce all state and federal laws regarding trespassing on the JPG facility. The future owner would have to maintain the fencing to ensure control of access.

3.2.1.3 Land Use Restrictions

Access to the site could be controlled through land use restrictions and zoning ordinances by limiting the type of uses allowed on the site. Planning boards and zoning commissions have the authority based on state or local laws to restrict uses of public property in the public interest. There are no current land use restrictions within JPG except for those conditions placed in the property transfer documents for land being turned over for private ownership (Appendix B). These "restrictions", however, take more of the form of a notification to the future landowner of the potential for various types of contamination of the property

(including potential UXO contamination of the property), as opposed to a restriction on the future use of the land.

Existing zoning ordinances for Jefferson County do not provide for significant restrictions on future land use. Jefferson County, Indiana has enacted county zoning ordinances in accordance with Indiana Code 5-3-1, 36-7-4-500, and 36-7-4-600. These ordinances provide the Planning Commission with the authority to regulate development within the county. The Planning Commission has established seven different types of districts under their zoning ordinances. They include:

- ?? Agricultural;
- ?? Residential (which has been divided into Single Family Residence, Two Family Residence, and Multi-Family Residence);
- ?? Business (which has been further divided into Neighborhood Business, General Business, and Highway Business);
- ?? Industrial;
- ?? Recreational;
- ?? Quarry and Mining; and
- ?? Flood Plain.

Under existing county ordinances, property owners do have to first obtain a zoning permit from the County Building Inspector prior to any construction activities being conducted. This notification, however, only ensures that the proposed construction is compatible with the existing zoning of the property. Once zoning approval has been received, then individual construction permits must be obtained from the county before construction can take place on the property.

Enforcement of the county zoning ordinances is by the County Building Inspector, which is currently one part-time employee. A formal complaint must be submitted to the County Building Inspector who, in turn, may take appropriate measures to prevent the construction, occupancy, or use of the property. If the property owner fails to cease the unlawful activity once he has been notified by the County Building Inspector, the county would then be forced to proceed with a civil action in the local courts. If the local court finds for the county, then the County Sheriff can enforce the action.

3.2.2 Evaluation of Access Controls

3.2.2.1 Effectiveness

In general, access control measures such as signs and fencing have been minimally effective in preventing trespassing onto the JPG facility. Signs have been posted around the JPG facility for many years. These signs restrict access and warn of the danger of ordnance. Based upon information gathered from the interview phase of this effort, the public pays little attention to these signs and has used JPG for recreational purposes. New signs, specifically in the vicinity of the site, would likely be minimally to moderately effective in controlling access to the site. However, these signs are necessary to allow for local law enforcement agencies to enforce trespassing laws. There are also fences along the perimeter of the JPG facility, but they have also proven to be ineffective in that numerous incidents of trespassing and poaching have been recorded. New fencing installed around the perimeter of the 323-acre site, including borders interior to JPG, would be more effective in reducing the risk of exposure to ordnance contamination, but it would also restrict the future use of the site. An ordnance avoidance survey will be required prior to installation of new perimeter fencing around the site. Periodic inspection and maintenance of the fencing would also be required to ensure its continued effectiveness. There are currently no zoning and only limited land use restrictions within JPG facility. Additional restrictions may be effective in preventing incompatible future developments of the land by public and private owners but, due to the lack of awareness and enforcement, it is doubtful that they would be effective in preventing trespassing by others. Based on this evaluation, the various forms of access control such as signage, fencing, and land use restrictions, when used alone, would be minimally to moderately effective in reducing the risk of OE exposure.

3.2.5 Implementability

The posting of signs has already been implemented around the perimeter of JPG. Posting of additional signs along the borders of the site, including those interior to JPG, could be easily implemented. Erection of fencing around the site would require installation of approximately 30,000 linear feet of six-foot high chain link fence and could be implemented at a significant cost. The implementation of land restrictions would be easy, since the property as not yet been transferred. Zoning ordinances and land uses restrictions could be imposed on the site, but would require that potentially lengthy legislative and approval processes be administered prior to their implementation.

3.2.6 Cost

The cost to implement access control measures at the site is presented in Table 3-1. The costs to implement signage and land use restrictions have not been determined at this time.

3.3 PUBLIC AWARENESS ALTERNATIVES

Raising public awareness of the hazards that exist within the site can be facilitated in a variety of ways, all with the goal of modifying behavior. Behavior modification relies on the personal responsibility of the site user. Even if the ordnance exists and there is open access to it, there is no risk if the behavior is appropriate. For behavior to be appropriate, one must understand the situation and voluntarily react in a responsible manner. The power of the federal government in modifying behavior is limited. Therefore, the local authorities must be convinced that the risks are sufficient to warrant their participation. The concept of behavior modification through public awareness extends to agencies that have jurisdiction over the site. Local government may need to modify its behavior in regards to the changes taking place at JPG. Modification of behavior through public awareness is essentially an education/information process and can include notice (such as deed notifications/restrictions, notifications during property transfers, and notification during permitting), education classes (including ordnance identification, safety presentations to various audiences, preparation of packages for administrative and public officials), printed media (including brochures and news articles), visual media (including videotapes and local television programs), exhibits/displays, and creation of an ad hoc committee. Each of these components is discussed in the following paragraphs. A summary of the public awareness alternatives considered in this plan and the effectiveness, implementability and cost of each alternative is presented in Table 3-2.

3.3.1 Description of Public Awareness Alternatives

3.3.1.1 Notice

Appropriate notice can exert a strong influence on one's behavior. When notice of ordnance contamination is given, it can affect the expectations of potential users, appropriate uses can be sought, and the land may still be used for economic gain. However, the contamination must be considered in the design and use of any site

Table 3-2
Institutional Control Plan
Public Awareness Alternatives

Alternative	Effectiveness	Implementability	Initial Cost	Annual Cost
Notice ?? Deed Notification ?? At Property Transfer ?? At Permitting	It is expected that land will be sold, leased or transferred and redeveloped for compatible land uses. All three methods of providing notice would be used and would be moderately effective in raising public awareness to the hazards at the site.	Ease of implementation will depend on the legalities associated with placing notice on deeds before and during property transfers.	Minimal	Minimal
Printed Media ?? Brochures/Fact Sheets ?? Newspaper Articles ?? Information Packages	Providing information through printed media would be very effective in modifying behavior through education of the public and local public officials. Continued effectiveness will rely on regular redistribution of the information.	Easy to implement with the commitment from USACE to publish the brochures, fact sheets and information packages and the commitment from local agencies to distribute them and local newspapers to publish the articles.	Produce and distribute 10,000 original, professional quality brochures and 50 information packages - $36,000	Update and distribute brochures and information packages - $5,000
Classroom Education ?? Ordnance Identification ?? Ordnance Safety	Classroom education would be a very effective means of modifying behavior through education of public officials and institutions. Continued effectiveness will rely on regular scheduling of ordnance identification classes and incorporation of ordnance safety classes into the local schools' curriculum.	Easy to implement with USACE providing instructors and materials for the classes. May be difficult to schedule classes to accommodate the availability of instructors and public officials. Classes can be video taped to overcome this.	Prepare and instruct ordnance education classes and provide teaching materials - $10,000	Conduct periodic classes and update materials- $3,000

Table 3-2 (Continued)
Institutional Control Plan
Public Awareness Alternatives

Alternative	Effectiveness	Implementability	Initial Cost	Annual Cost
Visual Media ?? Video Tapes ?? Television	Using visual media to inform the public about the presence of ordnance at JPG facility would be a very effective institutional control. Local television broadcasts would be especially effective in educating the local populace. Continued effectiveness will rely on the frequent rebroadcasts of television programs and the updating of video presentations.	Easy to implement with the commitment from USACE to fund and produce the videotapes and the commitment of local television stations to participate in the making of the programs and to broadcast the programs.	Producing, copying and distributing two videotapes - $101,000	Updating and distributing two videotapes - $2,000
Exhibits/Displays	Production and presentation of exhibits/displays would be a very effective way of educating and informing the public about the JPG facility. Displays should be presented in locations that normally attract a high volume of visitors for maximum effectiveness. Continued effectiveness will rely on the frequent updating of information presented in the displays.	Easy to implement with the commitment from USACE to fund and produce the exhibits/displays and the commitment of local institutions to host them. Moving a mobile display to various locations will require additional coordination and effort.	Permanent Display – $4,000 Mobile Display- $6,000	Updating Displays - $1,000

Table 3-2 (Continued)

Institutional Control Plan
Public Awareness Alternatives

Alternative	Effectiveness	Implementability	Initial Cost	Annual Cost
Web Site	A web site would be moderately effective in facilitating public awareness about the JPG facility. However, it would be an extremely useful resource for the proposed classroom education alternative. Also, a web site would be easy to update and expand, would allow for electronic postings of questions from the public and will become more effective as a greater number of people begin to access the internet.	A web site for JPG has already been implemented and includes information on UXO. Specific information for this site could be added fairly easily.	$2,000 (20 hours at $100/hour)	Minimal
Ad hoc Committee	An ad hoc committee would be moderately effective in facilitating public awareness about the JPG facility. The public at large would likely not participate in the meetings. However, this committee would be very effective in ensuring the implementation of other recommended actions at the site.	Easy to implement due to the significant public interest in the future uses of the site within JPG.	Miscellaneous administrative expenses related to ad hoc committee - $2,000	Miscellaneous administrative expenses related to ad hoc committee - $1,000

improvements or activities. Notices can be placed on a property in at least three ways: deed notification/restriction, notification during any property transfers, and notification during any permitting process. The property within JPG is still owned by the federal government, but the sale and transfer of several tracts including the 323-acre site is being considered. Any future reuse of the land would be subject to the GSA excess land process. The exception to this process may be the potential leasing of portions of the land for development. In either instance, future use of the land may be restricted through the three notice methods.

Deed Notification/Restriction

Notifications of ordnance contamination and restrictions of use could be placed on the deeds of any properties that are made available for use either through the government excess process or if the Army leases parcels for development.

Notification during Property Transfers

In general, property owners have a responsibility to protect the public from dangers associated with their property. In the case of the excising or leasing of ordnance-contaminated property, a liability exists that should be disclosed to prospective buyers or lessors. It may be prudent for a lending institution or bank regulatory agency to consider this factor when lending money on ordnance-contaminated property. Prior to placing a notification on a property transaction, one should obtain a legal rendering.

Notification during Permitting

Typically, controls are in place to protect property owners and their neighbors through approvals or permits required to develop properties in certain ways. Approvals generally ensure that proper notice is given, reasonable plans consider the presence of endangered species, wetlands, or other concerns, and that the land is being developed for an appropriate use. Permits combine all of the benefits of approvals and get a legally binding commitment for certain behavior. The assumption that permits can be revoked for cause provides enforcement under local authority.

3.3.1.2 Printed Media

Ordnance awareness, respect for the risk involved, and reinforcement of the message are key ingredients in minimizing the risk associated with ordnance contamination. One of the major avenues available to facilitate this awareness and understanding is through printed media,

in the form of brochures, fact sheets, newspaper articles, and other information packages. The opportunity to disseminate information through the printed media is readily available and can be easily facilitated. The current residents within the region should be aware of ordnance contamination within JPG. However, since trespassing on the property frequently occurs, area residents should be reminded of the ordnance contamination on a regular basis so that they will be aware of the potential hazards. Also, providing information to new residents, visitors, or others not currently aware of the situation is of primary importance. The addition, reinforcement, and augmentation of current knowledge is desirable in order to keep the realization of ordnance contamination and the potential hazards in the minds of people at all times.

Brochures/Fact Sheets

Under this alternative, brochures and fact sheets would be produced that describe the history of JPG, how to identify ordnance, safety procedures associated with the proper handling/avoidance of ordnance items, instructions for dealing with ordnance if encountered, and telephone numbers to contact if ordnance is encountered or if questions need to be answered. These brochures could be produced by USACE, but should also include local sponsorship and ownership. These brochures could be distributed as follows:

- ?? Mailed directly to all area residents in the City and County.
- ?? Enclosed in tax bills.
- ?? Enclosed in power bills.
- ?? Enclosed as a flyer in the local press.
- ?? Included in Chamber of Commerce literature.
- ?? Provided to hotels, motels, and other tourist attractions.
- ?? Provided through educational systems to all students in the region.
- ?? Provided to all recreational groups/clubs.
- ?? Provided to all professional groups/clubs.
- ?? Provided to all civic groups/clubs.
- ?? Provided to all military personnel.

Newspaper Articles/Interviews

Newspaper articles and interviews with local residents, the USACE, and other institutions can be printed to further educate the public concerning the ordnance contamination

at JPG. These articles can be very informative, can effectively reduce the risk of improper handling of ordnance, and can be presented in a positive manner. Articles have been previously published in the local newspapers. Many of the residents of the region lived and worked in the area when JPG was active. Interviews with these people would add interest to newspaper articles.

Information Packages for Public Officials

Generally, the public is aware of the ordnance contamination at JPG. An information package produced by USACE defining areas of primary concern would be valuable for public officials. This sharing of information would reinforce the importance of local involvement in the institutional control plan. Recommended contents of the packages include maps of the site showing the areas of greatest contamination, types and potential danger of the ordnance discovered on the site, USACE contacts and other contacts available to discuss safety concerns.

3.3.1.3 Classroom Education

Public awareness can be facilitated through classroom education. Although the public generally understands that ordnance exists within JPG, they do not have the necessary training to properly identify and avoid ordnance if encountered. A properly educated public is more likely to make appropriate decisions related to the safe and proper precautions of found ordnance. Classroom education can be offered in two areas, ordnance education and ordnance safety.

Ordnance Education

Although everyone that enters JPG needs to be aware of the potential risk associated with ordnance, it may not be necessary for everybody to be trained in ordnance identification. The message to the general public should be not to touch anything that looks like ordnance, shrapnel or any other unidentified material. However, it would be prudent to provide additional training to public officials and members of institutions who have a role they must provide at JPG.

There are any many firms that specialize in ordnance identification and handling who have prepared and presented classes in the past. Ordnance identification classes are conducted at various times and locations around the nation. It may be possible to schedule classes and transport public officials to these classes; although this could be costly and time consuming. Alternatively, USACE may wish to consider bringing in experts in ordnance detection and

identification to the area to provide classes. An ideal opportunity to provide ordnance identification classes would be in conjunction with a scheduled removal action. Videos of the classes could be made and viewed by those unable to attend.

Ordnance Safety

The affected public should be educated about the potential dangers associated with ordnance and should understand the safety procedures to follow should they encounter a suspected ordnance item. Safety presentations should be made to all public and private primary and secondary schools in the region.

3.3.1.4 Visual Media

Ordnance awareness, respect for the risk involved, and reinforcement of the message are the key ingredients in minimizing the risk associated with ordnance contamination. One of the major avenues available to facilitate this awareness and understanding is through visual media in the form of videotaped programs for use during presentations and for broadcast on local television stations. The opportunity to disseminate information through visual media is readily available and can be easily facilitated. Most of the current residents are aware of the ordnance contamination at JPG and reinforcement and augmentation of their existing knowledge would be valuable. Providing additional information to new residents, visitors and others not currently aware of the full extent of the situation would be beneficial as well.

Videotapes

A professional quality videotape can be produced that describes the history of JPG, how to identify ordnance, safety procedures associated with the avoidance of ordnance items, instructions for dealing with ordnance if encountered, and telephone numbers to contact if ordnance is encountered or if questions need to be answered. The videotape can be produced by USACE, and should include interviews with local residents and landowners as well as USACE personnel familiar with the site. This videotape could be used in classroom education programs and distributed to local libraries and colleges. The length of this videotape should be 5-7 minutes.

Television

Local television would provide excellent access to programs about JPG, the presence of ordnance, how to identify ordnance, safety procedures associated with the avoidance of

ordnance items, instructions for dealing with ordnance if encountered, and telephone numbers to contact if ordnance is encountered or if questions need to be answered. The local stations should be willing to broadcast the videotapes described in paragraph 3.3.1.4 as well as a longer version (approximately 30 minutes). This longer videotape would include more detailed information about JPG and associated ordnance contamination and would be appropriate for inclusion in the local television stations' programming schedule.

3.3.1.5 Exhibits/Displays

Placing exhibits/displays in museums or other areas where the public will be exposed to educational information can be an effective method of raising and preserving general awareness and educating the public on the possible risks associated with the ordnance contamination at JPG. There are several locations within the city and county where a display would receive exposure and would aid in informing and educating the public. Some of these locations include the Madison City Hall, the Jefferson County Courthouse and bank and other institution lobbies. A mobile display could be prepared to be moved from one location to another to gain exposure to the maximum number of potentially affected people.

3.3.1.6 Web Site

The JPG internet web site could be a very effective method of raising general awareness and educating the public about JPG. The web page contains information on the history of JPG, how to identify ordnance, and safety procedures associated with the avoidance of ordnance items. Additionally, instructions for dealing with ordnance if encountered and telephone numbers to contact if ordnance is encountered are provided. The web page could be easily updated, would allow for users to ask questions about the site via an electronic bulletin board, and would provide an appropriate educational tool for use in the proposed classroom education alternative.

3.3.1.7 Ad Hoc Committee

Creation of an ad-hoc committee, composed of influential members of the local community and representatives from USACE, would serve as a mechanism for facilitating implementation of recommended actions to reduce risks of public exposure to ordnance and gauging the current levels of public awareness of and support for these actions.

3.3.2 Evaluation of Public Awareness Alternatives

3.3.2.1 Effectiveness

In general, the public awareness alternatives described here would be very effective in reducing the risk to the public by educating them about the ordnance contamination at JPG. The most effective alternatives are those that provide information to the public through various mediums of communications including printed media, classroom education, exhibits/displays, videotapes, television and the internet. It has been assumed that informing and educating the public to the potential risks associated with the ordnance remaining on the site will reduce the possibility of injury. However, it is also understood that public awareness may incite a reverse reaction to a small segment of the population that may view the dangerous handling of ordnance as an adventure.

3.3.2.1 Implementability

All of these alternatives would be easy to implement provided that USACE funds and produces the necessary media items and that the local community supports its dissemination. In order for these alternatives to be successfully implemented, support from a variety of local institutions including public officials, television stations, libraries, schools and businesses is required.

3.3.2.3 Cost

The cost to implement public awareness alternatives at the site is presented in Table 3-2.

SECTION 4
RECOMMENDATIONS

4.1 INTRODUCTION

The selection of recommended alternatives was based upon the description and evaluation of the alternatives presented in Section 3 of this report, discussions with USACE and institutions that have the capability, authority and willingness to support the proposed institutional controls for the site, and overall knowledge of the JPG facility. The recommended institutional control alternatives are considered to be appropriate methods of reducing the risk to the public from the UXO items at the site.

4.2 ALTERNATIVES NOT RECOMMENDED

The access control alternatives discussed in Section 3 of this report are not recommended for the 323-acre wooded site. Existing signage has proven to be ineffective in preventing access to the JPG facility. Installing and maintaining new fencing at the site is not cost-effective and would be only minimally effective in controlling access to the site based on instances of trespassing in areas of JPG which are already fenced. Although land use restrictions would be useful in preventing future incompatible uses by public and private landowners, they would not effectively reduce the risk of exposure to people unaware of the dangers of ordnance contamination. Notice via deed notification, during property transfer, and/or at the time of permitting would only be effective in raising awareness if and when property transactions occurred, and only then to those involved in the transaction as opposed to the public as a whole. Therefore, the access control alternatives are not recommended as institutional controls for the 323-acre wooded site.

4.3 RECOMMENDED ALTERNATIVE

Based on the institutional analysis presented in this report, the public awareness alternative was identified as the preferred institutional control alternative for the 323-acre wooded site. The recommended institutional control alternative would be composed of the components listed below. These components are presented in the recommended order of implementation:

?? Printed Media – This alternative would be very effective, easy to implement and cost-effective with an estimated initial cost of $36,000 and an annual cost of $5,000 for

reinforcement. This is the most effective means to reach the maximum number of potentially affected people.

?? Ad hoc committee – This alternative would be an effective means of ensuring the implementation of other recommended actions at the site. It is easily implementable and cost-effective with an estimated initial cost of $2,000 and an annual cost of $1,000

?? Classroom education – This alternative would be very effective, easy to implement and cost-effective with an estimated initial cost of $10,000 and an annual cost of $3,000 for reinforcement.

?? Visual Media – This alternative would be very effective, easy to implement and cost-effective with an estimated initial cost of $101,000 and an annual cost of $2,000 for reinforcement. Its primary advantage is that it utilizes a very popular medium to disseminate information.

?? Exhibits/Displays – This alternative would be very effective, easy to implement and cost-effective with an estimated initial cost of $10,000 and an annual cost of $1,000 for reinforcement. The displays will continually reinforce the message to the public.

?? Web Site – This alternative would be moderately effective with potential to be very effective when used as an educational tool, easy to implement and cost-effective with an estimated initial cost of $2,000 to add site-specific information to the established JPG website. The effectiveness of this component will increase as internet use increases.

The total cost to implement the recommended institutional control alternative is $169,000 with an annual reinforcement cost of $12,000.

APPENDIX A
RESULTS OF INTERVIEWS

DEPARTMENT OF THE ARMY
JEFFERSON PROVING GROUND
INTERVIEW

Interviewee: Mr. Ken Knouf and Mr. Graves Mann
Location: Jefferson Proving Ground and by Phone
Address: Jefferson Proving Ground, Madison, Indiana
Telephone: (812) 273-2551

SUMMARY OF INTERVIEW

The interview with the JPG facility personnel was conducted in two parts. Part one with Ken Knouf, Site Manager, during the week of May 10, 1999 and Part two with Graves Mann on June 14, 1999. JPG was founded in 1941 to test both weapons and munitions and operated until 1995 when the mission was transferred to Yuma Proving Grounds. Recently JPG was transferred from TECOM to SBCCOM reporting through Newport Chemical Depot, Newport, Indiana and is authorized by the Department of the Army. There are no sunset provisions but the facility is undergoing a BRAC closure, which was mandated by Congress. JPG jurisdiction is limited to the boundaries of the facility and there are satellite facilities.

Public safety function currently at JPG is limited to access restrictions. Land-use control function is limited to planning, as JPG has no authority to create or enforce local ordinances. JPG funding is currently coming from the BRAC closure program funds and is being used to support institutional controls such as maintaining perimeter fencing and road access. Constraints on the current JPG staff to support institutional control implementation is limited to only planning function as they have no enforcement authority on property that is transferred to private ownership.

The current JPG staff interfaces regularly with USACE and has developed a good working relationship, but joint responsibility can only be possible on property that the federal government controls. JPG staff is very knowledgeable on the history of explosive ordnance use, location and safety procedures on the JPG facility. Relationships with the three Counties Sheriffs and the State Police have been established. Additionally, they deal with FWS, IDNR, IDEM and other local and state agencies.

JPG staff will be maintained as long as the BRAC closure is ongoing and as long as there is some property that has not been turned over to other entities. Funding sources include

money from the BRAC program as well as money from Department of the Army Installation annual budgets.

DEPARTMENT OF THE ARMY
TESTING AND EVALUATION COMMAND
INTERVIEW

Interviewee: Mr. Paul Cloud
Location: Phone
Address: Aberdeen Proving Ground, MD 21005
Telephone: (410) 278-1088

SUMMARY OF INTERVIEW

Mr. Paul Cloud, the BRAC Environmental Coordinator, was interviewed by telephone on June 3, 1999 and again on February 24, 2000. He indicated that the Army is currently considering two different alternatives for the 323-acre wooded site. They include development of the area by a local real estate developer, Mr. Ford, or transferring the area to the community for use as a park. The Army is currently considering both alternative future land uses. Mr. Cloud indicated that the command for JPG has been transferred from U.S. Army Testing and Evaluation Command (TECOM) to Soldier and Biologic Chemical Command (SBCCOM). The BRAC closure is proceeding with little impact from the change of command.

TECOM is a major subordinate command of Army Material Command (AMC) and was created to ensure the testing and acquisition of material for the U.S. Army. JPG was created in 1941 under the direction of the Department of Defense War Powers Act. JPG was authorized under DOD statutes to test weapons and munitions. There are no sunset provisions although the facility is under going a congressional closure under the BRAC program. TECOM has jurisdiction world wide within the boundaries of all its facilities under authority from the Department of Defense.

Public safety is a responsibility of TECOM at all its facilities. Land-use control functions are routinely used at TECOM facilities to protect the public and workers by proper planning. As the current property owner TECOM prefers the most extensive UXO clean-up of the site in order to allow for the most unrestricted use of the property. As a result, the rankings of potential clean-up alternatives for the site would include (1) surface and subsurface clearance of OE to Depth, (2) surface clearance of OE, and (3) institutional controls. TECOM is funded by the federal government in an annual appropriation to maintain its facilities by the U.S. Congress.

TECOM's mission is directly related to the issue of ordnance safety. The limitations on TECOM to support institutional controls deal mainly with the issue of enforcement. Once the property is transferred to a non-federal agency or private sector they cannot enforce any condition of the transfer. TECOM has required certain deed conditions in the past as terms of transfer including deed restrictions related to UXO, prohibition of groundwater use, and deed access restriction for CERCLA maintenance conditions.

TECOM is currently using USACE as their primary contractor manager for site cleanups. Members of TECOM have the technical capabilities to explain explosive ordnance history, general locations and safety procedures for UXO.

TECOM has some remaining issues with the U.S. EPA and IDEM but their general intergovernmental relationships are good. They are currently working with the following agencies: FWS, IDNR, IDEM, County Commissioners, Community Economic Development Authority and other state and local agencies. The Mission of TECOM is very stable and will continue into the foreseeable future. TECOM is funded by the federal government with an annual appropriation to maintain its facilities.

U.S. FISH AND WILDLIFE SERVICE INTERVIEW

Interviewee: Dr. Joseph R. Robb
Location: Jefferson Proving Ground
Address: 1661 West JPG Niblo Road, Madison, In 47250
Telephone: (812) 273-0783

SUMMARY OF INTERVIEW

The U.S. Fish and Wildlife Service (USFWS) has a continuing interest in the 323-acre wooded site because of it location and the natural biological community. The future land use envisioned by USFWS could range from open public use to restricted public use. The 323-acre wooded site would become a nature center.

USFWS that operates under the jurisdiction of the Department of the Interior (DOI) and their mailing address is:

Fish and Wildlife Service
United States Department of the Interior
1849 C street NW.
Washington D.C. 20240

The FWS is a federal organization charged with the mission to provide, preserve, restore, and manage a national network of lands and waters for the widest benefit associated with wildlife and wildlands. FWS is responsible for public safety and land use on land that they administer. The FWS is also responsible for the management of natural resources, public education on wildlife, enforcement of the refuge rules, and operating and maintenance of other JPG lands.

The Refuge Recreation Act of 1962 (RRA) and the National Wildlife Refuge System Administration Act of 1966 (RSAA) provides the FWS with their primary authority to administrate all lands. The RRA established the compatibility standard for use of the Refuge System lands and requires that any recreational use be compatible. The RRA places restrictions to ensure that funds must be available for the development, operation, and maintenance of the recreation uses.

The RSAA and rules found in 50 CFR Subchapter C closes the refuge to all public use until a determination of compatibility is made. After the determination of compatibility, FWS must make an administrative determination that the use is clearly safe, does not conflict with policy or other legal requirements, is cost-effective, and complies with other related environmental criteria. If the use is compatible, it can still be denied if it fails the administrative determination.

The FWS has shown their desire to provide institutional controls by restricting land use over their history of operating the facility. They have instituted a sign-in policy for certain portions of the refuge, and they have warned the hunters of the potential for UXO. By these acts, they have demonstrated a strong desire to protect both people and wildlife from UXO.

INDIANA STATE POLICE
INTERVIEW

Interviewee: Major Aldrich and Captain Sommer
Location: 100 North Senate Avenue
Address: Indianapolis, Indiana 46204-2259
Telephone: (317) 232-8326 and 2328226 respectively

SUMMARY OF INTERVIEW

A telephone interview was conducted on June 18, 1999 with Major Aldrich of the Strategic Planning and Legal Office and Captain Sommer of the Enforcement Office. I explained that Parsons ES was working for the Huntsville Corps of Engineers at JPG developing an Institutional Control Plan.

Indiana State Police as currently constituted was created in 1933 or 1934, prior to which they dealt only with traffic laws. The basis of authority for the Indiana State Police is under the Indiana Code Title 10. The governing laws of Indiana do not require a sunset provision for the State Police and limit the jurisdiction to within the State of Indiana.

Public safety function is a responsibility of the Indiana State Police in the practice of its authority. Within the jurisdiction of the Indiana State Police, land-use control functions are limited to instances where a court decision mandates an enforcement action or actions.

The Indiana State Legislature is the primary source of funding for the Indiana State Police. Support for institutional controls would be limited to the typical activities that they routinely provide throughout the State. The State Bomb Squad is organized into several teams distributed about across the State and they serve as first responders and secure the area. Depending on the complexity of the situation, they may require assistance from an Army explosive ordnance disposal team. The issue of trespass in Indiana is handled either as simple or criminal trespass. Simple trespass is if no signs or notices are posted and would require a civil action to involve the State Police. Criminal Trespass is when the property is clearly marked as no trespassing or the persons(s) fails to leave the site when advised. If criminal trespass is occurring, then the state police can be contacted and could remove the person(s). The Indiana State Police cannot enforce any deed restrictions without a court order.

The Indiana State Police are willing to accept joint responsibility to work with USACE as long as a request is sent through proper channels. Personnel on the State Bomb Squad are typically trained at Redstone Arsenal in Alabama to learn the history of explosives, how to locate explosives and the proper safety procedures.

Intergovernmental relationships are a cornerstone for the mission of the Indiana State Police and they deal with numerous federal, state and local agencies. Both interviewees indicated that the mission of the state police is very stable and is expected to continue for the foreseeable future. The Indiana State Police derive most of their funding from the Indiana State Legislature and some Federal Grant money.

JEFFERSON COUNTY
INTERVIEW

Interviewee: Steve Lyons, Commissioner Jefferson County
Location: County Offices via Telephone
Address: Main Street, Madison, In 47250
Telephone: (812) 265-8944

SUMMARY OF INTERVIEW

Mr. Steve Lyons, a Commissioner of Jefferson County, was interviewed by telephone on May 14, 1999. He indicated that the county was disappointed that they did not get control of the bulk of property south of the firing line. The county thought that they should have been given more time to prepare a county reuse plan before the property was offered to the public.

Creation of the State of Indiana occurred in 1816 and the County was founded shortly thereafter. The basis of authority for the county is the State constitution and the Indiana Administrative Codes. There are no sunset provisions for the continuance of the County government and the county functions under Home Rule.

Jefferson County Government has jurisdiction within the boundaries of the County. The 323-acre wooded site is located in Monroe Township, which has no volunteer fire department at this time. Currently, JPG contracts for fire service from other townships. The county is charged with public safety as it relates to emergency management, volunteer fire services and the county sheriff. Jefferson county exercises land use control by a Planning and Zoning Commission. Attachment A contains a copy of the Jefferson County local ordinances.

Jefferson County collects local property taxes from all private property in the county as the principal source of revenue. Jefferson County has full planning and zoning authority and as such could authorize specific institutional controls for the 323-acre property on JPG. Jefferson County is constrained in the area of ordnance safety because they lack trained personnel for dealing with UXO.

Jefferson County has expressed a willingness to work with USACE in the event of a transfer of land to private or state ownership. Technical capabilities of Jefferson County are limited in explaining explosive ordnance history, general location and safety procedures for

dealing with UXO. Intergovernmental relationships are very good with local and state agencies and are improving with federal agencies.

Jefferson County has a very stable future for their mission, as the county is very viable and growing. The funding source is based on county taxes and should be stable to slightly growing.

JEFFERSON COUNTY SHERIFF
INTERVIEW

Interviewee: Ms. Kim Walters
Location: Jefferson County Sheriff Office
Address: Main Street, Madison, In
Telephone: (812) 265-2648

SUMMARY OF INTERVIEW

The Office of County Sheriff was established under a charter from the County Government shortly after the state was founded. The Office of County Sheriff derives its power from the State of Indiana Administrative Code. The Indiana Administrative Code has no sunset provisions that cover the Office of County Sheriff. Geographical jurisdiction is limited to the area within the county borders.

The Office of County Sheriff is responsible for public safety as it relates to the current public laws. Land use control functions are limited to enforcing action brought by the County Courts such as eviction and charges of trespassing within their jurisdiction. Financial capabilities of the County Sheriff Office are dependent on the budget approved annually by the County.

The Jefferson County Sheriff Office currently does not have a bomb squad or any personnel that are certified to handle UXO. In the event that a suspicious package is found, they secure the area and contact the state police bomb squad for assistance. They have limited knowledge of the explosive ordnance used and the possible locations on JPG. Implementation of some of the provisions used for the institutional controls would require county court orders. Specifically, trespass on private property requires a court order, in order for the County Sheriff to place a person under arrest.

The Jefferson County Sheriff Office is willing to work with USACE to administer any institutional control placed on the property in the event that the property is sold to any non-federal agencies. Currently, the Jefferson County Sheriff Office interfaces with various local, county, state and federal agencies. They routinely work with the City of Madison Police Department and the Indiana State Police Department.

The Jefferson County Sheriff Office has a very stable future for their mission, as the county is very viable and growing. The funding source is based on county taxes and should be stable to slightly growing.

APPENDIX B
EXAMPLE JPG PROPERTY TRANSFER DOCUMENTS